

1969

**OPERATING
SUMMARY**

SIDNEY TOWNSHIP
(Batawa)

**water pollution
control plant**

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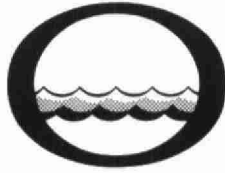
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Water management in Ontario

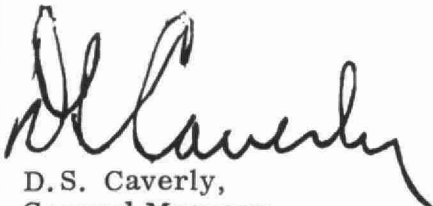
Ontario
Water Resources
Commission


135 St. Clair Ave. W.
Toronto 195
Ontario

The operating efficiency and financial status of the water pollution control facilities operated for you in 1969 are presented in the following pages.

The regional operations engineer's comments and the statistical data will assist you in gauging the plant's level of performance. A new flow chart and up-to-date design data are also provided.

Various divisions and sections within the Commission have co-operated in providing what we trust is an accurate and concise annual operating summary.


D.S. Caverly,
General Manager.


D.A. McTavish, P. Eng.,
Director,
Division of Plant Operations.

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SIDNEY (BATAWA)
water pollution control plant

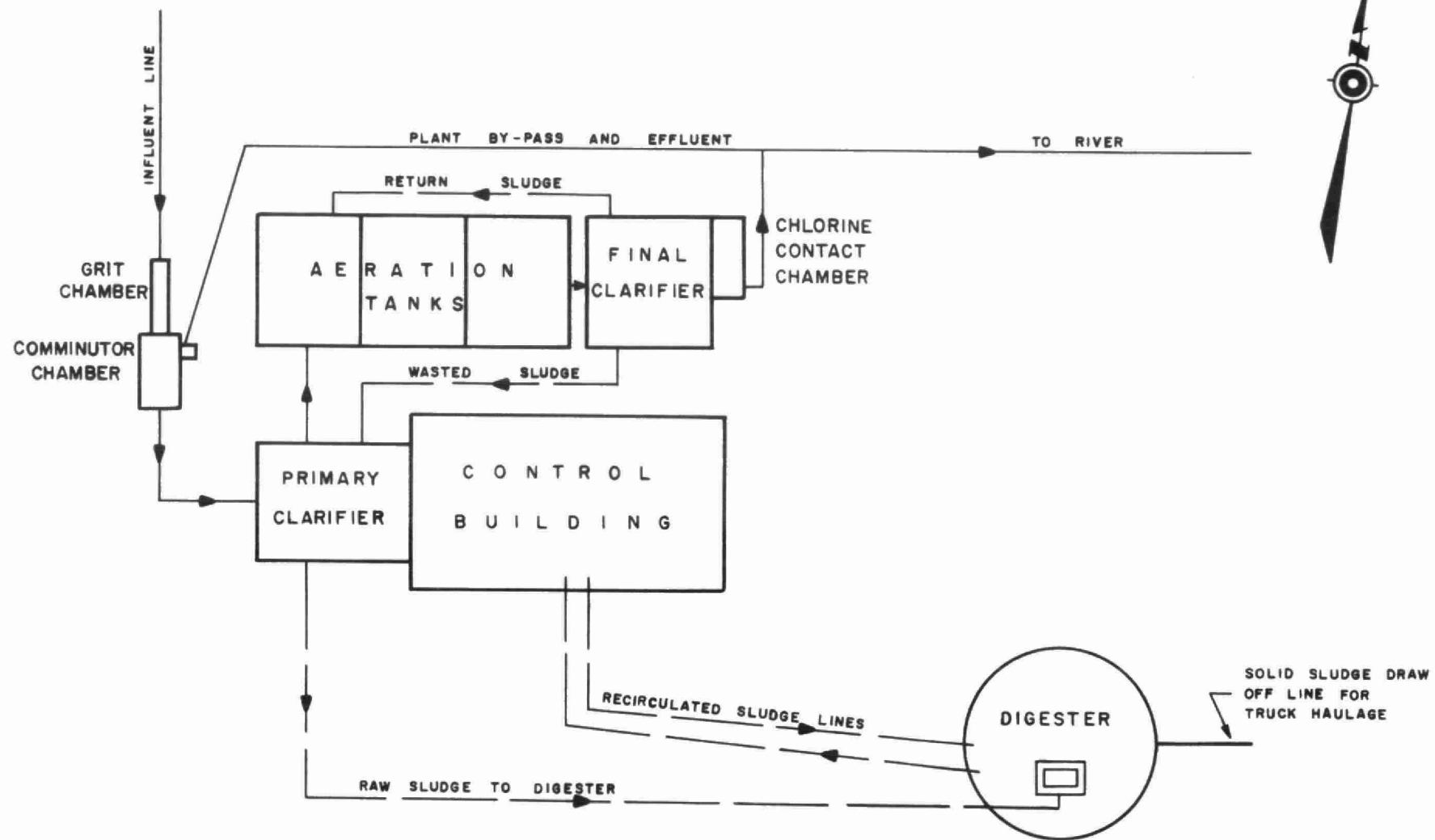
operated for

THE TOWNSHIP OF SIDNEY (BATAWA)

by the

ONTARIO WATER RESOURCES COMMISSION

1969 ANNUAL OPERATING SUMMARY



SIDNEY - BATAWA WPCP
FLOW CHART

DESIGN DATA

PROJECT NO.	2-0121-62	TREATMENT	Activated Sludge
DESIGN FLOW	0.12 mgd	DESIGN POPULATION	1,500
BOD - Raw Sewage	220 mg/l	SS - Raw Sewage	250 mg/l
- Removal	90%	- Removal	90%

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
 Size: Two 9' 3" x 9" x 6" swd
 Flow Velocity: 0.6 fps
 Retention: 16.6 sec

Comminution

- One Chicago Pump, Model 10A

Screening

- One 1½" c-c on comminutor bypass
- One 1½" c-c on plant bypass

Primary Sedimentation

Size: One 16' x 16' x 11' swd (9,130 gal)
 Retention: 1.83 hr
 Loading: Surface, 468 gal/ft²/day
 Weir, 3750 gal/ft/day

SECONDARY TREATMENT

Type: Diffused air; three-pass
 Size: One 30' x 20' x 10' swd (37,400 gal)
 Retention: 7.5 hr

Diffusers: Ceramic Tubes

Spacing: 9 per pass (2 passes)
 12 per pass (1 pass)

Air Supply

Type: Sutorbilt
 Size: Two 140 scfm @ 6 psi

Secondary Sedimentation

Type: Falk
 Size: One 20' x 12' x 10' swd (15,000 gal)
 Retention: 3.0 hr
 Loading: Surface, 500 gal/ft²/day
 Weir, 5000 gal/ft/day

CHLORINATION

Type: Advance
 Size: 50 lb/day

Chlorine Contact Chamber

Size: One 10' x 4' x 8' (2,000 gal)
 Retention: 24 min

OUTFALL

- to Trent River

SLUDGE HANDLING

Type: Fixed cover, integral heat
 exchanger coils
 Size: One 20' dia x 17' 4" (6,000 cu ft or
 37,500 gal)
 Loading: 1.5 lb/cu ft/mo

'69 REVIEW

GENERAL

A survey of the Batawa sewer systems was conducted in the summer. This revealed a fairly large leak in the water main on Bishop Street which was thought to have been a cause of the high flows. A meeting was held with the Township and representatives of the Bata Shoe Co. in August, and it was promised that this situation would be corrected as quickly as possible. Repairs were completed in October, but there was no significant reduction in flows to the plant. It was hoped that further meetings with the Township and the Company would reveal the causes of the problem.

A minor modification in plant piping was expected to allow a more accurate evaluation of the quantity of return sludge.

EXPENDITURES

The cost of operating the Township of Sidney Water Pollution Control Plant was \$9,314.82, an increase of \$1,751.56 from the previous year's \$7,563.26. Fewer repairs and lower sundry costs, however, kept operating costs well within the 1969 budget of \$10,040.

FLOWS

In 1969, 119 million gallons of sewage were treated at the plant, re-

presenting an average daily flow of 320,000. Installation of a plant flow meter made this the first full year for which accurate flows have been determined. The average daily flow of 320,000 gallons was considerably higher than the design flow of 125,000 gallons a day. Flows exceeding hydraulic capacity were bypassed directly to the river.

PLANT EFFICIENCY

The average BOD and suspended solids concentrations were 35 and 39 milligrams per litre respectively in the plant influent, and 10 and 11 mg/l in the plant effluent. This resulted in percent reductions of BOD and suspended solids of 71 and 72 respectively. The effluent concentrations were well below Commission objectives. The very low influent concentrations are indicative of large amounts of infiltration to the collection system.

PLANT FLOWS and CHLORINATION

Since some portion of the flow to the plant is bypassed, a high chlorine residual is maintained in the plant effluent to disinfect these bypassed flows.

A total of 168 cubic yards of digested sludge was disposed of by tank truck.

CONCLUSIONS and RECOMMENDATIONS

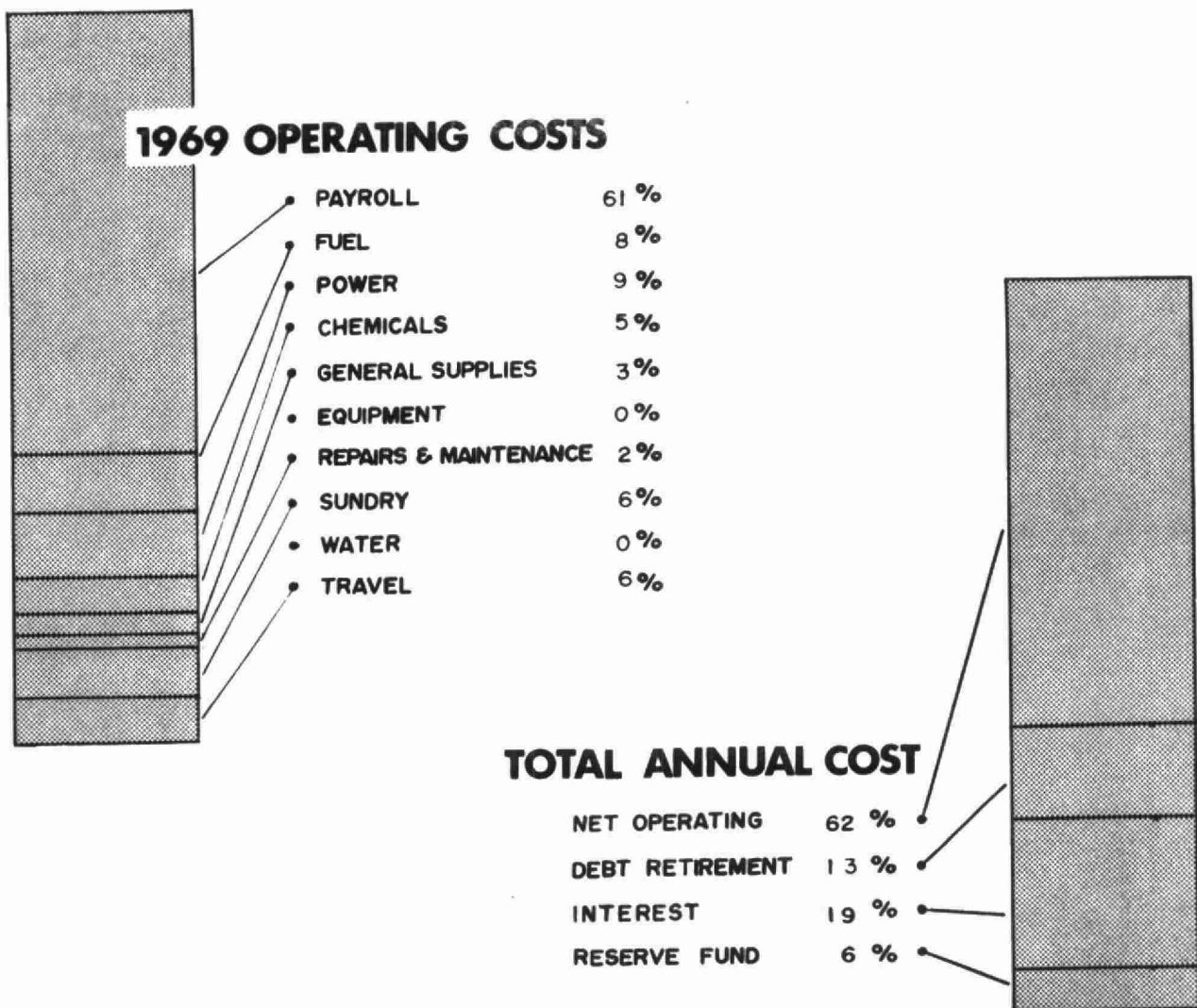
Considering the high flows received at this project, the plant produced an excellent effluent. More effort must be expended on the reduction of infiltration to the sewer system.

PROJECT COSTS

NET CAPITAL COST (Final)	\$162,152.89
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>109,605.08</u>
Long Term Debt to OWRC	\$ <u>52,547.81</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1969	\$ <u>13,772.77</u>
Net Operating	\$ 9,314.82
Debt Retirement	1,906.00
Reserve	895.42
Interest Charged	<u>2,941.88</u>
TOTAL	\$ <u>15,058.12</u>

RESERVE ACCOUNT

Balance @ January 1, 1969	\$ 4,278.18
Deposited by Municipality	895.42
Interest Earned	<u>262.59</u>
	\$ 5,436.19
Less Expenditures	<u>-</u>
Balance @ December 31, 1969	\$ <u>5,436.19</u>



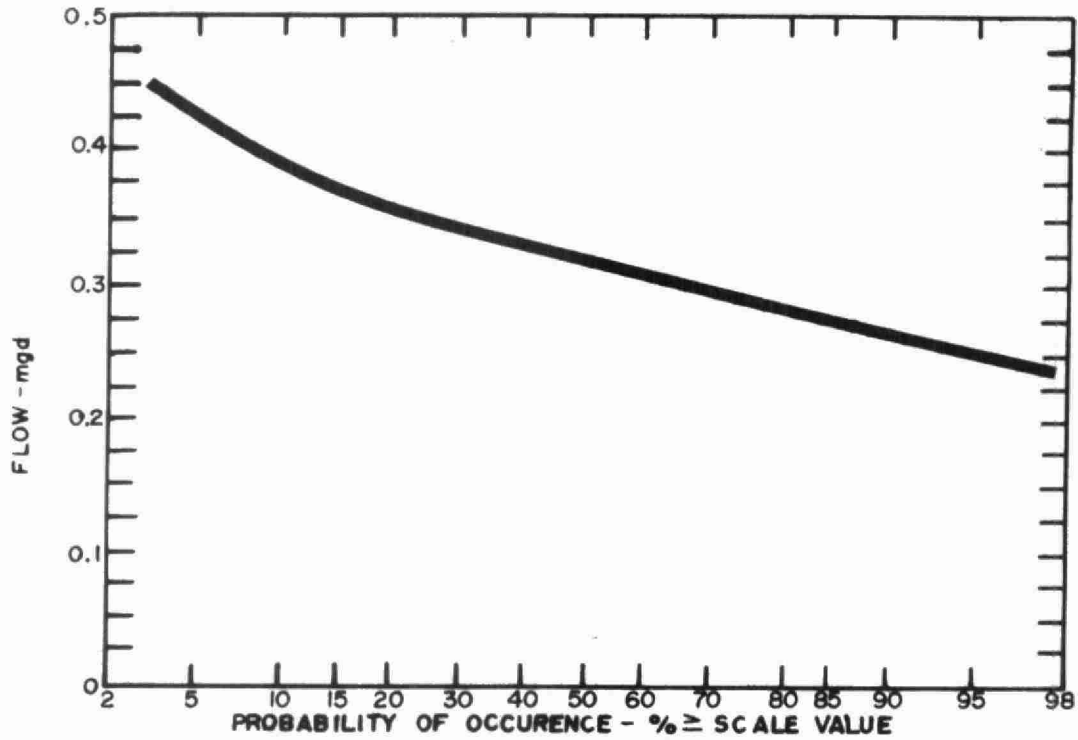
Yearly Operating Costs

YEAR	MILLION GALLONS TREATED	TOTAL OPERATING COSTS	COST PER MILLION GAL	COST PER LB OF BOD REMOVED
1965	80.53	\$7,877.10	\$ 95.33	26 cents
1966	87.42	6,812.13	101.04	15 cents
1967	78.97	7,313.53	92.61	13 cents
1968	89.97	7,563.26	84.06	16 cents
1969	118.72	\$9,314.82	78.46	31 cents

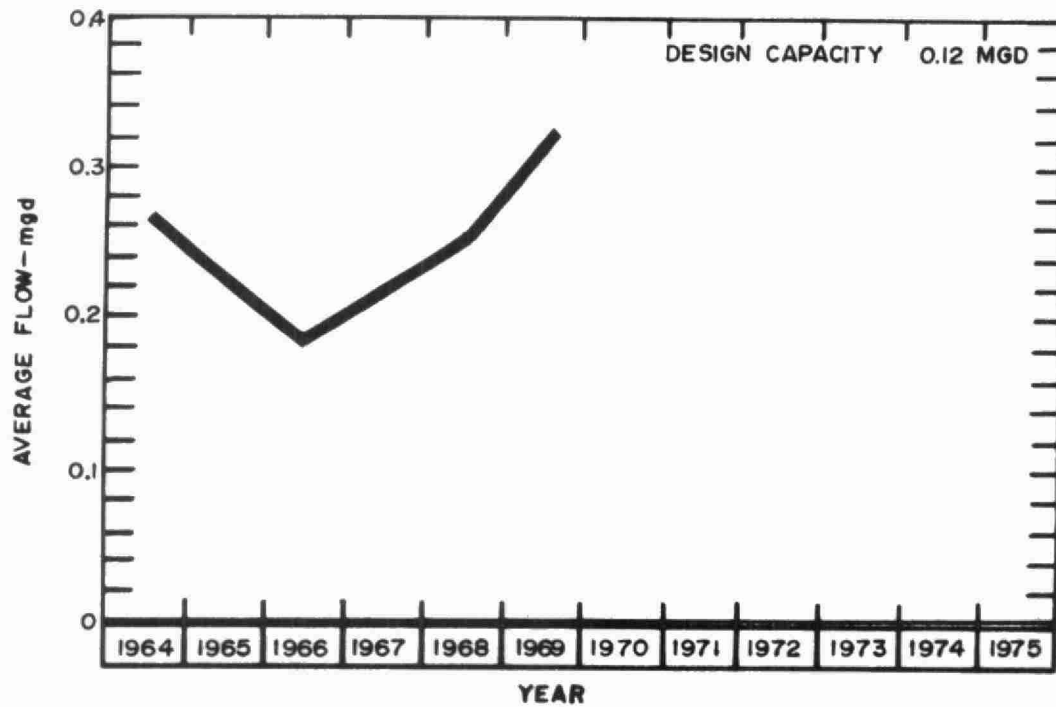
Monthly Operating Costs

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICALS	GENERAL SUPPLIES	EQUIPMENT	REPAIRS and MAINTENANCE	SUNDRY	WATER	TRAVEL
JAN	524.69	379.46	-	63.50	70.02	-	-	-	-	11.71	-	-
FEB	876.61	479.90	-	108.38	69.35	123.64	20.00	-	-	20.36	-	54.98
MAR	839.96	638.61	-	64.16	60.57	-	8.75	-	-	22.57	-	45.30
APR	606.34	372.75	-	59.54	70.04	-	30.43	-	-	3.68	-	69.90
MAY	900.63	515.10	-	64.05	78.14	110.25	31.43	-	-	79.01	-	22.65
JUNE	607.74	434.64	-	52.28	65.32	-	-	-	-	15.30	-	40.20
JULY	648.97	427.58	-	43.48	65.32	-	38.09	-	-	23.42	-	51.08
AUG	676.40	491.27	-	30.09	70.72	-	27.21	-	-	1.61	-	55.50
SEPT	859.23	506.72	-	32.49	73.42	110.25	35.75	-	-	65.21	-	35.39
OCT	708.74	451.93	-	30.57	65.99	-	29.47	-	87.45	5.00	-	38.33
NOV	635.18	402.40	-	44.58	76.79	-	16.32	-	-	57.81	-	37.28
DEC	1430.33	719.53	-	106.71	51.14	110.25	28.51	-	81.85	273.83	-	58.51
TOTAL	9314.82	5819.89	-	699.83	816.82	454.39	265.96	-	169.30	579.51	-	509.12

PROCESS DATA

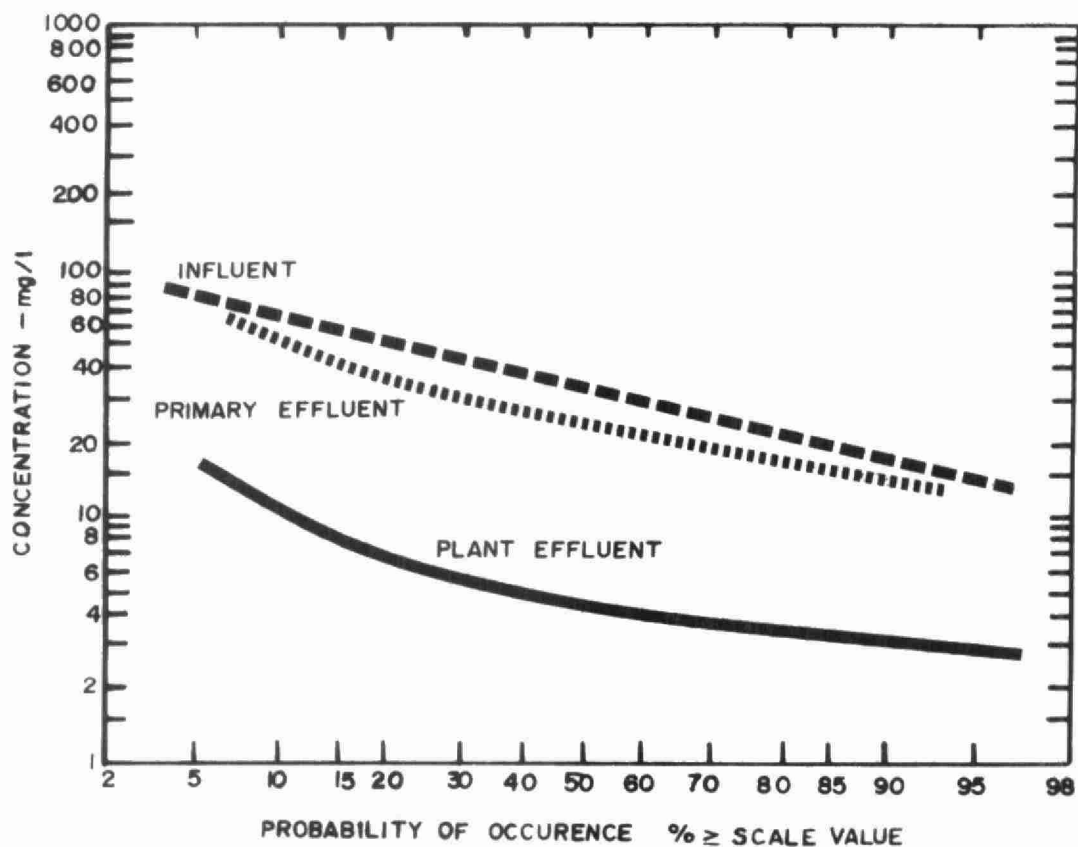


FL O W S

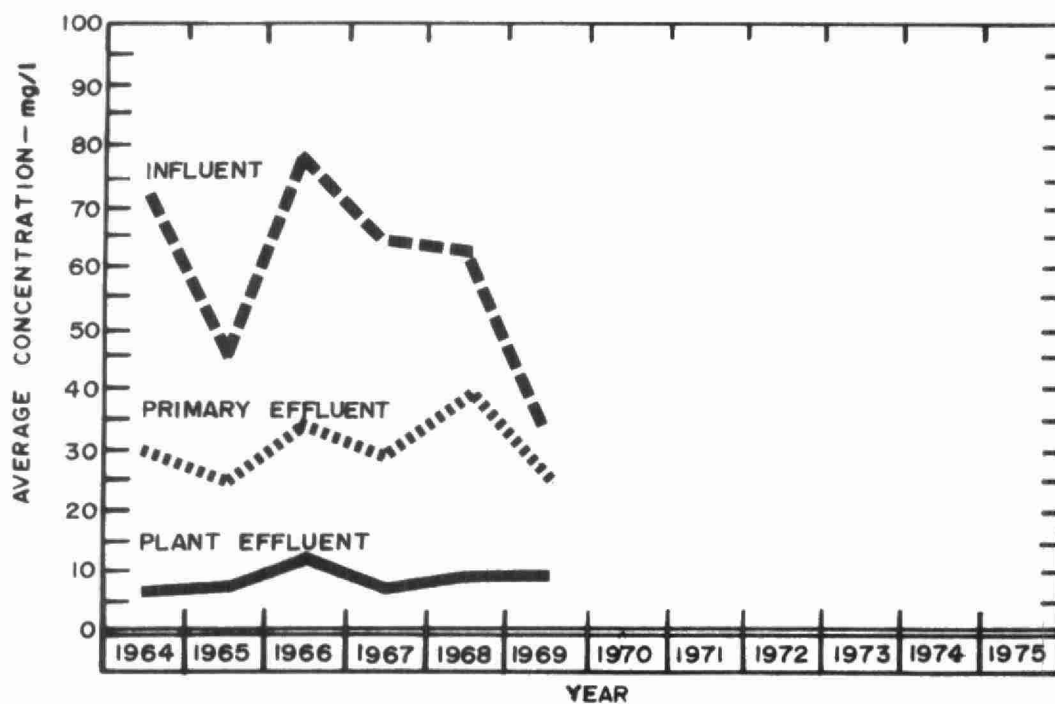


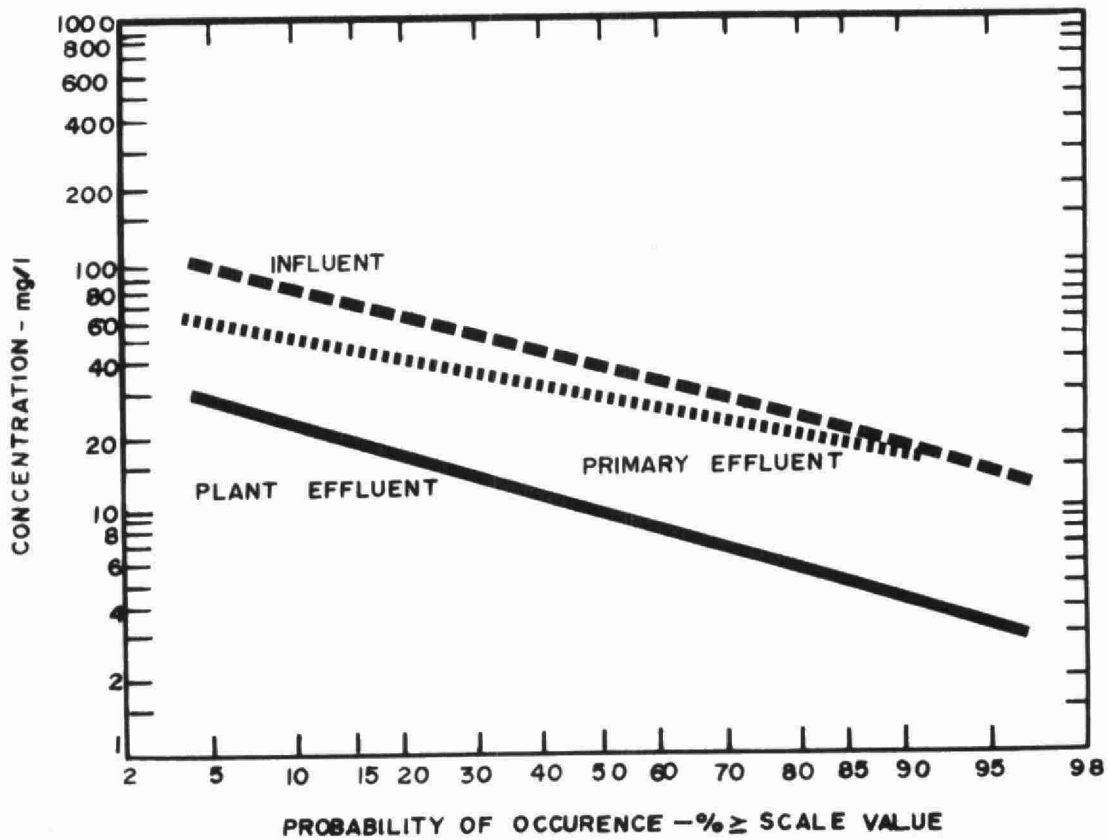
PLANT FLOWS and CHLORINATION

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal	CHLORINE USED pounds	DOSAGE mg/l
JAN	8.51	.27	.38	.25	242	2.8
FEB	9.13	.33	.39	.30	218	2.4
MAR	11.08	.35	.44	.30	227	2.0
APR	12.34	.41	.48	.32	241	2.0
MAY	9.98	.32	.47	.22	229	2.3
JUNE	9.03	.30	.36	.21	260	1.5
JULY	9.76	.32	.39	.26	283	2.9
AUG	9.70	.31	.35	.28	246	2.5
SEPT	9.77	.33	.40	.29	262	2.7
OCT	9.22	.30	.34	.23	291	3.2
NOV	9.95	.33	.39	.10	246	2.5
DEC	10.25	.33	.39	.30	283	2.7
TOTAL	118.72	-	-	-	3028	-
AVERAGE	-	.32	-	-	252	2.6

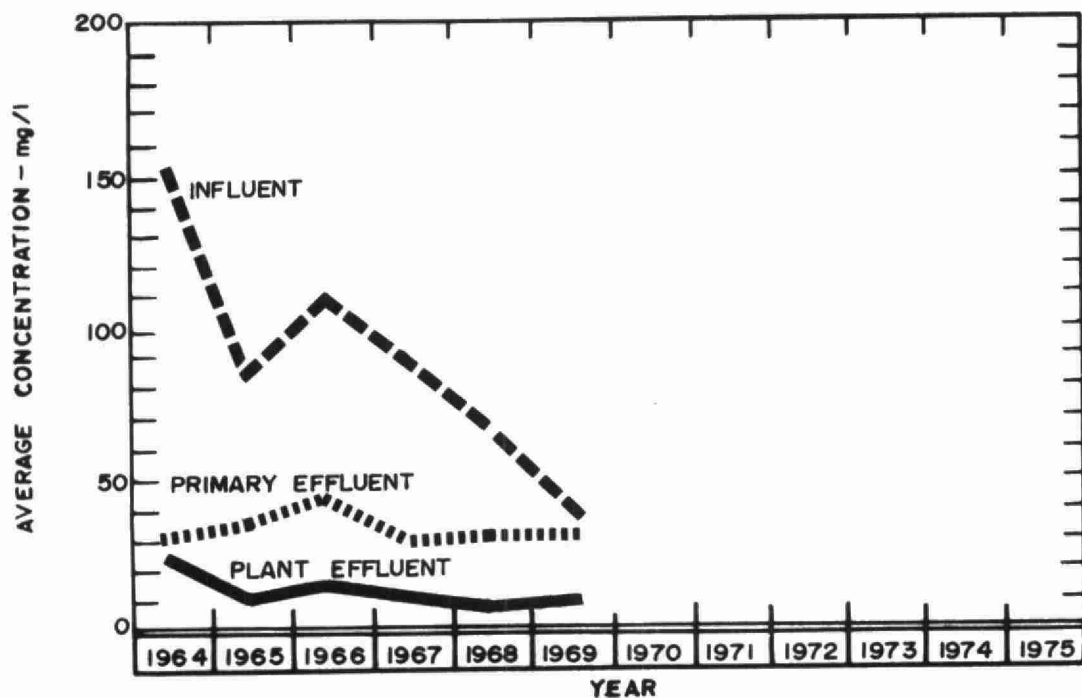


BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS

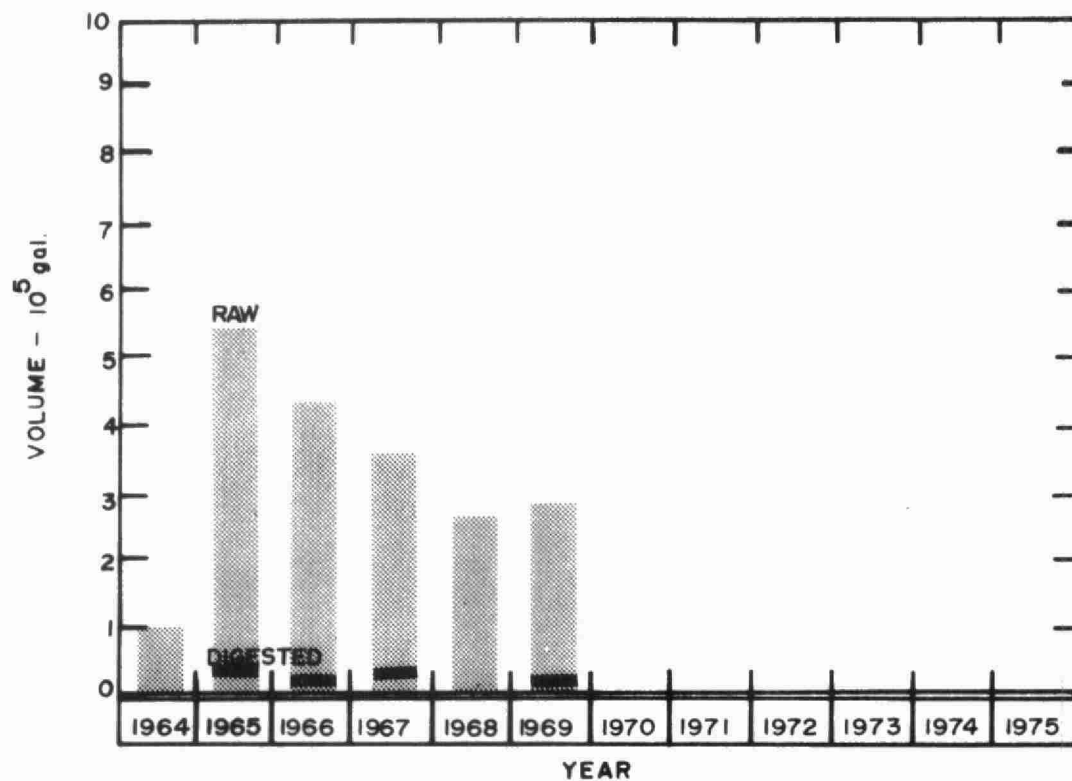


PLANT EFFICIENCY

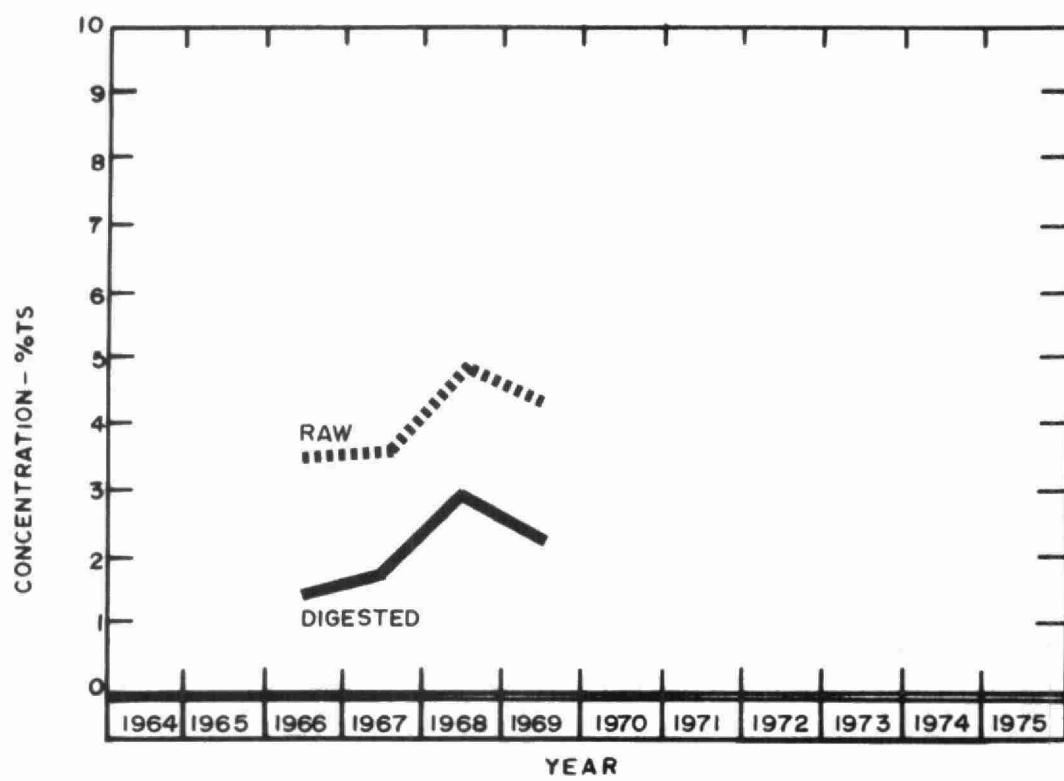
MONTH	BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				GRIT REMOVAL cu ft
	INF. mg/l	EFF. mg/l	REDUCTION		INF. CONCN mg/l	EFF. CONCN mg/l	REDUCTION		
			%	10 ³ pounds			%	10 ³ pounds	
JAN	-	-	-	-	-	-	-	-	0
FEB	34	4	88	2.7	20	10	50	.9	0
MAR	40	5	88	3.9	30	1	97	3.2	0
APR	46	4	91	5.2	50	10	80	4.9	4
MAY	24	5	79	1.9	40	10	75	3.0	0
JUNE	40	7	83	3.0	60	5	92	5.0	3
JULY	22	4	82	1.8	25	5	80	2.0	0
AUG	8	3	62	.5	15	5	67	1.0	0
SEPT	26	6	77	2.0	60	10	83	4.9	4
OCT	70	4	94	6.1	60	25	58	3.2	24
NOV	32	14	56	1.8	25	20	20	.5	0
DEC	40	20	50	2.1	50	20	60	3.1	0
TOTAL	-	-	-	-	-	-	-	-	35
AVERAGE	35	10	71	2.8	39	11	72	2.9	-

AERATION

MONTH	AVG DAILY FLOW mil gal	AERATION INF.		SECONDY. EFF.		MLSS CONCN mg/l	F/M <u>lb BOD</u> <u>lb MLSS</u>
		BOD mg/l	SS CONCN mg/l	BOD mg/l	SS CONCN mg/l		
JAN	.25	-	-	-	-	1650	-
FEB	.25	42	20	4	10	1530	.19
MAR	.25	34	20	5	1	1230	.18
APR	.25	30	30	4	10	1140	.18
MAY	.25	24	30	5	10	1340	.12
JUNE	.25	18	25	7	5	1930	.06
JULY	.25	55	60	4	5	1820	.20
AUG	.25	14	25	3	5	1830	.05
SEPT	.25	10	30	6	15	1820	.04
OCT	.25	24	50	7	5	1740	.09
NOV	.25	24	45	14	20	1130	.14
DEC	.25	30	40	20	20	1360	.14
TOTAL	-	-	-	-	-	-	-
AVERAGE	.25	28	34	10	10	1540	.13



DIGESTION



SLUDGE DIGESTION and DISPOSAL

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME	TOTAL	VOL	VOLUME	TOTAL	VOL	VOLUME	TOTAL	DEWATERED	LIQUID
	10 ³ gal	SOLIDS %	SOLIDS %	10 ³ gal	SOLIDS %	SOLIDS %	10 ³ gal	SOLIDS %	cu yd	cu yd
JAN	22.5	-	-	0	-	-	22.5	-	0	0
FEB	20.4	1.5	-	0	7.1	-	20.4	.04	0	0
MAR	23.1	1.1	-	3.0	3.0	-	23.1	-	0	18
APR	23.1	1.3	-	10.1	3.6	-	23.1	.003	0	60
MAY	24.3	1.8	-	0	4.4	-	24.3	.004	0	0
JUNE	27.0	3.6	-	0	2.4	-	27.0	.08	0	0
JULY	29.7	4.0	-	0	4.5	-	29.7	.01	0	0
AUG	30.3	1.9	-	0	3.5	-	30.3	.01	0	0
SEPT	31.2	2.5	-	0	4.6	-	31.2	.04	0	0
OCT	26.4	4.7	-	0	5.2	-	26.4	.08	0	54
NOV	20.5	1.4	-	6.1	5.4	-	20.5	.05	0	36
DEC	20.4	2.2	-	0	5.1	-	20.4	-	0	0
TOTAL	298.9	-	-	19.2	-	-	298.9	-	0	168
AVERAGE	24.9	2.3	-	1.6	4.4	-	24.9	.01	0	14



Date Due

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Water management in Ontario